

PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Docket No: Q76309

Takashi IMANISHI, et al.

Appln. No.: 10/607,217

Group Art Unit: 3682

Confirmation No.: 5687

Examiner: William C. JOYCE

Filed: June 27, 2003

For: TOROIDAL-TYPE CONTINUOUSLY VARIABLE TRANSMISSION

SUBMISSION OF APPEAL BRIEF

MAIL STOP APPEAL BRIEF - PATENTS

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Submitted herewith please find an Appeal Brief.

The USPTO is directed and authorized to charge the statutory fee of \$540.00 and all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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Date: December 9, 2008

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APPEAL BRIEF UNDER 37 C.F.R. § 41.37

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Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

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I. REAL PARTY IN INTEREST

The real party in interest is NSK LTD., by virtue of an assignment recorded by the Assignment Branch of the U.S. Patent and Trademark Office on June 27, 2003, at Reel 014254, Frame 0447.

II. RELATED APPEALS AND INTERFERENCES

To the knowledge and belief of Appellant, the Assignee, and the undersigned, there are no other appeals or interferences before the Board of Appeals and Interferences (“Board”) that will directly affect or be affected by the Board’s decision in the instant Appeal.

III. STATUS OF CLAIMS

Claims 1-5 and 7-13 are all the claims pending in the application.

Claim 6 has been canceled from the application.

Claims 2-5 and 7-13 are withdrawn from consideration.

Claim 1 is rejected and is the subject of this appeal.

IV. STATUS OF AMENDMENTS

The Appendix included with this Brief sets forth the claims involved in the appeal and reflects the claims as presented in the Amendment Under 37 C.F.R. § 1.111 filed on January 11, 2008. All Amendments have been entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Referring to the features of the exemplary embodiment, which is shown in FIGS. 1-3, claim 1 is directed to a toroidal-type continuously variable transmission.

As shown in FIG. 3, the transmission includes a pair of input disks 12a, 12b and a pair of output disks 13a, 13b, each including a first traction surface 12c, 12d, 13c, 13d. Power rollers 15a, 15b, each including a second traction surface 15e, 15f, are respectively interposed between the first traction surfaces 12c, 12d, 13c, 13d of the input disks 12a, 12b and output disks. Displacement shafts 18 support respective ones of the power rollers 15a, 15b, rotatably.¹

As shown in FIG. 2, an oil passage 70, 80a-c guides lubricating oil to the traction surfaces 12c, 12d, 13c, 13d, 15e, 15f of the power rollers 15a, 15b, input disks 12a, 12b and output disk 13a, 13b. As shown in FIG. 2, the oil passage 80c is disposed in one of the displacement shafts 18 and has an injection hole 18d.²

As shown in FIG. 1, a line filter 71 a disposed in the oil passage 70.³ In addition, as shown in FIG. 2, another filter 84b is disposed on a step formed in an exit side of the oil passage 80c, and situated near the injection hole 80d.⁴ This other filter 84b *is a mesh filter that has a rougher mesh (i.e., more coarse mesh) than the line filter 71a.*⁵ The use of the other mesh filter prevents dust or burrs from contacting the *traction surfaces 12c, 12d, 13c, 13d, 15e, 15f of the toroidal-type continuously variable transmission.*⁶ Since these surfaces 12c, 12d, 13c, 13d, 15e,

¹ See original specification at page 12, line 23 to page 13, line 19.

² See original specification at page 20, line 12 to page 21, line 12.

³ See original specification at page 18, lines 7-11.

⁴ See original specification at page 23, lines 8-20.

⁵ See original specification at page 22, line 23- page 23, line 1.

⁶ See original specification at page 26, lines 2-6.

15f are used to change the gear ratio of the transmission, it is critical that foreign matter prevented from contacting these surfaces.

Referring to both FIGS. 1 and 2, the line filter 71 is disposed upstream to the other filter 84b with respect to the traction surfaces 12c, 12d, 13c, 13d, 15c, 15f.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claim 1 is unpatentable under 35 U.S.C. § 103(a) over at least one: of Yamamoto (U.S. Patent No. 6,203,467) or Imanishi (U.S. patent No. 6,746,364) in view of Bauer, et al. (U.S. Patent No. 5,382,099).

VII. ARGUMENT

Applicant respectfully requests the board to withdraw the rejection of claim 1 at least because there is no reasonable combination of the applied references that would meet every claim recitation. For example, there is no reasonable combination of the applied references that would meet the claimed transmission including a line filter disposed in the oil passage; and a filter disposed on a step formed in an exit side of the oil passage, and situated near the injection hole, *wherein the filter has a rougher mesh than the line filter*, the line filter being is disposed upstream to the filter with respect to the traction surfaces.

A. The Examiner's assertions

The Examiner acknowledges that neither Yamamoto nor Imanishi discloses the recited line filter or other filter. Therefore, the Examiner takes official notice regarding the use of a line filter and looks to the filter 30 of Bauer.

The Examiner further baldly asserts that it would have been obvious to adjust the size of a line filter so that the other, downstream filter has a rougher mesh than the line filter for three reasons: to provide a specific quantity of fluid, to trap a specific size of wear particles, or as an obvious design choice.⁷ The Examiner alleged that two hypothetical configurations regarding contaminants trapped in the oil passage, as supporting his contention that it would have been obvious to provide the line filter with a finer mesh.⁸

B. The Examiner's assertions are unsupported

None of the applied references discloses a transmission in which the downstream filter has a rougher mesh than the line filter. The Examiner's *entire position* is based on hindsight, is a misapprehension of what one of ordinary skill would understand, and is unsupported by any evidence of record. Therefore, the Examiner has not made a *prima facie* case of obviousness⁹

As to the Examiner's assertions regarding providing a specific quantity of fluid, the Examiner's position appears to be based on hindsight since the Examiner has not provided any

⁷ See Office Action dated April 18, 2008, at paragraph bridging pages 4 and 5.

⁸ See Office Action dated April 18, 2008, at paragraph bridging pages 5 and 6.

⁹ See MPEP 2142- The legal concept of *prima facie* obviousness is a procedural tool of examination which applies broadly to all arts. It allocates who has the burden of going forward with production of evidence in each step of the examination process. See *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); *In re Saunders*, 444 F.2d 599, 170 USPQ 213 (CCPA 1971); *In re Tiffin*, 443 F.2d 394, 170 USPQ 88 (CCPA 1971), amended, 448 F.2d 791, 171 USPQ 294 (CCPA 1971); *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968). The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.

evidence that would suggest modifying the mesh of a line filter for the purpose of reducing the quantity oil.¹⁰

As to the Examiner's assertions regarding contaminants trapped in the oil passage, the Examiner's position appears to be *based solely on Applicant's specification*, which discloses that:¹¹

[S]ubstances such as dust which has entered in the assembling operation of the transmission and burrs produced in the machining operations of the parts thereof remain in the block extending from the line filter 71a up to the exit for the lubricating oil.

As there is no evidence of record to support the Examiner's assertions, and the only disclosure of record that is consistent with the Examiner's assertions is found in the present specification, it is apparent that the Examiner is relying on hindsight.¹² If not, the Examiner should have been able to provide some evidence to support his position.

As to the Examiner's assertion that reducing the size of the mesh in a line filter would have been an obvious design choice, Applicant respectfully points out that the criticality of the relationship is described in the portion of the specification reproduced above-- i.e., the use of the other mesh filter to prevent larger objects, such as dust or burrs from contacting the traction surfaces. It is especially important to dispose a filter having a rough mesh downstream of a

¹⁰ See *KSR v. Teleflex*, 82 USPQ2d 1385, 1396, 127 S.Ct. 1727, 167 L.Ed.2d 705 (U.S. 2007), quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329 (CA Fed. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness").

¹¹ See original specification at page 26, lines 2-6.

¹² See MPEP 2142- The tendency to resort to "hindsight" based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

portion where drilled holes as the lubricating holes in the trunnion intersects with each other, because the burrs produced at the time of machining tend to be generated in that portion. Moreover, since the *traction surfaces of a toroidal-type continuously variable transmission* are used to change the gear ratio of the transmission, it is critical that foreign matter is prevented from contacting these surfaces.

Finally, Applicant respectfully submits that it is the common knowledge of the person having ordinary skill in the field of designing hydraulic circuits that *the filter disposed downstream should have a finer mesh*, which is the opposite of the recited configuration. That is, when the filter disposed downstream has a finer mesh, the finer filter will not be clogged easily because larger contaminants will be filtered and removed at the rougher mesh so that the larger contaminants do not clog the finer mesh. In contrast, if the lubricant is filtered by the finer mesh prior to the rougher mesh, the rougher mesh normally *does not function in any way*, because the larger contaminants to be filtered by the rougher mesh have already been removed by the finer mesh. Thus, it is beyond the conventional common knowledge to have the mesh of the filter rougher than that of the line filter.

Therefore, for the reasons discussed above, Applicant respectfully requests the Board to reverse the Examiner's rejection.

VIII. CONCLUSION

The USPTO is directed and authorized to charge the statutory fee (37 C.F.R. §41.37(a) and 1.17(c)) and all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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Date: December 9, 2008

CLAIMS APPENDIX

CLAIM 1 ON APPEAL:

1. A toroidal-type continuously variable transmission, comprising:

a pair of input and output disks each including a first traction surface;

power rollers each including a second traction surface and respectively interposed between the first traction surfaces of the input and output disks;

displacement shafts for supporting respective ones of the power rollers rotatably;

an oil passage for guiding lubricating oil to the traction surfaces of the power rollers, input disk and output disk, wherein the oil passage is disposed in one of the displacement shafts and has an injection hole;

a line filter disposed in the oil passage; and

a filter disposed on a step formed in an exit side of the oil passage, and situated near the injection hole, wherein the filter has a rougher mesh than the line filter,

wherein the line filter is disposed upstream to the filter with respect to the traction surfaces.

EVIDENCE APPENDIX:

Pursuant to 37 C.F.R. § 41.37(c)(1)(ix), submitted herewith are copies of any evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 or any other evidence entered by the Examiner and relied upon by Appellant in the appeal.

None

RELATED PROCEEDINGS APPENDIX

Submitted herewith are copies of decisions rendered by a court or the Board in any proceeding identified about in Section II pursuant to 37 C.F.R. § 41.37(c)(1)(ii).

None